

Inspection Report
Solar Turbines International
2200 Pacific Highway
San Diego, California 92138-5376
(RCRA / Non-Major)
CAD008314908

Inspection By: Shelia Lowe
Inspection Date: May 16, 1988
Date of Report: May 18, 1988

I. Purpose:

A Compliance Evaluation Inspection and Land Disposal Restriction Inspection was conducted at Solar Turbines International located at 2200 Pacific Highway in the city of San Diego, California, to evaluate the facility's compliance with state and federal regulations. The last CEI occurred July 2, 1986.

II. Representatives Present:

A. State Inspectors:

Shelia Lowe, Hazardous Materials Specialist California State Department of Health Services, Toxic Substances Control Division, Surveillance and Enforcement Unit.

Robert Senga, Senior Hazardous Materials Specialist California State Department of Health Services, Toxic Substances Control Division, Surveillance and Enforcement Unit.

Brian Wu, Hazardous Materials Specialist California State Department of Health Services, Toxic Substances Control Division, Surveillance and Enforcement Unit.

B. Facility Representatives:

Gerald Hardacre, Principal Environmental and Safety Specialist

Ed. Hillary, Senior Facility Engineer

III. Facility Description and Background:

This facility manufactures components used in the assembly of gas turbine engines. These engines are packaged and used in conjunction with Boost Compressor Pumps which step up pressure in oil

transportation pipe lines. Gas turbine packages are also used in conjunction with generators for emergency electric power in remote areas where electric power is not available. Testing facilities are utilized at this facility to conduct product performance and developmental engineering evaluation.

IV. Waste Streams and Waste Management Procedures:

Hazardous waste generated at this facility are from various types of operations. Machine operations produce waste coolants and oils which are removed at least monthly to be recycled and reused. Waste that is not recyclable is stored in 55 gallon drums and sent off-site for disposal (incineration or landfill). The metal chips produced during machining operations are removed by a scrap metal company. Other waste such as grinding dust is disposed of at a class 1 landfill. Cleaning operations produce acid waste from large process tanks used to clean sheet metal parts prior to assembly and high temperature brazing. This acid waste is neutralized and solidified then disposed of at a class 1 landfill. Kolene waste is produced by a de-scaling operation, used to remove heavy scale from castings. Kolene waste is solid at room temperature and is disposed of at a class 1 landfill.

Paint and solvent sludge is generated from painting operations and equipment clean-up. The paint sludge is stored in 55 gallon drums and disposed of at a class 1 landfill, or by incineration. Plating operations produce acid waste in small quantities and is neutralized prior to disposal. Recycling of 1,1,1-trichloroethane produces 1,1,1-trichloroethane sludge from the distillation process. This sludge is disposed of by incineration.

V. Observations:

A. Record Review:

The following records were reviewed and found to be in order. Manifests from 1985-1988 were reviewed and found in order.

Inspection Records:

" Audit " is done monthly by the Environmental Coordinator (Ed Hillary) and a waste generating-Department Supervisor. Weekly inspections are done by the stores supervisor.

Operation Record:

" Hazardous Waste Log " is kept at the storage area; the information is then put into a computer.

Training Records:

Employee's training records were reviewed and found in order.

Contingency Plan:

Reviewed and found in order.

Other records reviewed and found in order includes: Closure Plan, Updated Closure Cost Estimate, Waste Analysis Plan, Annual and Binneal Reports.

A. Storage: Drums

1. Treatment - Coolant Waste
2. TCE- Distillation

B. Coolant Recycling:

1. To separate the oil from the coolants, the waste is centrifuged.
2. The oil is collected in a holding tank and later sent off-site to a recycler.
3. The coolant is " Pasteurized " and used.

C. TCE Distillation (1,1,1- Trichloroethane)

Used solvent is received from Kearney Mesa facility, in addition to on-site. The used solvent is recycled the day of arrival. The still runs daily.

Hazardous Waste Storage Area

The safety cabinet contained inspection log, h.w. record log. This area is clean and well managed.

VI. Potential Violations:

The facility is clean and well managed, no violations were noted at the time of the inspection.

VII. Discussion With Management:

The facility has a telephone in their hazardous waste storage area, however, Mr. Hardacre was advised to install some other type of communication system for immediate access purposes.

VIII. Attachments:

Appropriate Checklists

Land Disposal Restrictions
(Part 268)

Yes No Comments

Did the facility handle any waste restricted from land disposal* since its effective prohibition date: 268.1(b) (See attached listing)

F001 thru F005 solvents?
F020-23 and F026-28 Dioxins?
"California List" H.W.?

X — 111-Trichloroethane
— — 1 Solvent Mixture
— — —

Exceptions:

Can the prohibited wastes continue to be land disposed because: 268.1(c)-

(1) A case-by case extension has been granted under Subpart C or 268.5?

(2) A no-migration petition has been granted under 268.6?

(3) The waste is contaminated soils or debris resulting from a CERCLA 104 or 106 response action or a RCRA corrective action (until 11/8/88)?

(4) The waste is from conditionally-exempt small quantity generators?

(5) A farmer is disposing of waste pesticides in accordance with 262.70? or:

The waste is not subject to effective CA list prohibitions? 268.32 and:

The waste has been certified as meeting treatment standards? 268.40(a) or:

An exemption has been granted because the waste is certified treated by the best developed available technology (BDAT)? 268.44(a)

— — N/A
— — —
— — —
— — —
— — —
— — —
— — —
— — —
— — —
— — —

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* Land disposal means placement in or on the land, including a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or placement in a concrete vault or bunker for disposal. 268.2(a)

Land Disposal Restrictions - Continued
(Part 268)

If F001-5 solvent wastes are being land disposed after 11/8/86 (except in an injection well), are they: 268.30(a)-

Yes No

Comments

N/A

111-tri Chloroethane

(1) From a 100-1000 kg/mo. generator?

— —

is recycled on-site
other solvent mixture

(2) Generated from a CERCLA response action or corrective action under RCRA?

— —

(3) The initial generators waste is a solvent-water mixture, solvent-containing sludge or solid, or non-CERCLA or RCRA corrective action solvent-contaminated soil containing less than 1% total F001-5 solvent constituents (Table CCWE of 268.41)?

— —

TCE (Trichloroethane)
distillation still
on-site. In house
recycling.

(4) The solvent waste is a residue from treating a waste listed in (a)(1-3) above?
or:

— —

N/A

The solvent waste is a treatment residue not described above where the residue belongs in a different treatability group than the initial waste, and contains less than 1% total F001-5 solvent constituents (Table CCWE of 268.41)?

— —

Are the F001-5 wastes being land disposed after 11/8/86 exempt from the prohibitions because: 268.30(c)-

(1) The wastes meet the standards of Subpart D?

— —

(2) The wastes are disposed of at a facility that has been granted a no-migration exemption?

— —

(3) The wastes are disposed of at a facility that has been granted a case-by-case exemption?

— —

Has the facility not merely diluted the restricted waste to achieve compliance? 268.3

— —

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Land Disposal Restrictions - Continued
(Part 268)

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
Storage:			
Are restricted wastes only being stored where: 268.50-			
(a)(1) A generator is using tanks or containers while accumulating a sufficiently large batch to properly recover, treat, or dispose?	<u>X</u>	—	—
(a)(2) A TSD is accumulating a batch as above? and:			
(i) Each container is marked with the contents and accumulation start date?	<u>X</u>	—	—
(ii) Each tank is marked with the contents, accumulation start date, quantity of H.W., and/or the information is in the operating record?	—	—	<u>N/A only stores in containers</u>
(c) The TSD can <u>prove</u> that any storage over one year was solely for the purpose of necessary accumulation? or:	—	—	<u>N/A</u>
(d) The wastes are subject to an approved no-migration petition, case-by-case extension, or a nation-wide variance?	—	—	
(e) The wastes meet treatment or BDAT standards, or CA list specific prohibitions? or:	—	—	
(f) Liquid hazardous wastes over 50 ppm PCBs are stored for less than a year, and in a 761.65(b) (TSCA) complying storage area?	—	—	

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Land Disposal Restrictions - Continued
(Part 268)

If restricted wastes are generated on-site,
has the generator: 268.7-

Yes

No

Comments

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(a) Using knowledge or analysis,
determined if the waste is restricted
from land disposal?

X

(1) If determined that the waste is
restricted and requires treatment
before land disposal, have they notified
the treatment facility with each shipment
of waste, and included:

- (i) EPA H.W. number?
- (ii) Appropriate treatment standard and
prohibitions?
- (iii) Manifest # for the waste?
- (iv) Available waste analysis data?

X

X

X

X

If determined that the waste is restricted
based solely on knowledge, is supporting
data used in the determination maintained
in the operating record? 268.7(a)(4)

N/A

If the waste is determined to be restricted
but not require further treatment, has
the generator notified the land disposal
facility as above, and certified the
waste meets both treatment standards and
applicable prohibitions, or one of the
exemptions? 268.7(a)(2-3)

For an on-site treatment facility, is
the information contained in the notice
required by a generator (except for the
manifest number) on file? 265.73(b)(11)

Facility says it's
1,1,1-trichloroethane waste also
the 11-tu. From their
satellite company.
Kearny Mesa Plant
N/A Not a land disposal
facility

For an on-site land disposal facility,
is the information contained in the
notice required by a generator or
treater (except the manifest number) on
file? 265.73(b)(12)

Recordkeeping:

Has the treatment facility tested,
noticed, and certified (if appropriate)
each waste shipment? 268.7(b)(1-2)

X

Note: If an off-site shipment without notification has occurred, list the accepting
treatment or disposal facility for proper follow-up.

Land Disposal Restrictions - Continued
(Part 268)

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
For an off-site treatment facility, is a copy of the generator's notice on file? 265.73(b)(9)	—	—	<i>not an off-site treatment facility</i>
If a land disposal facility, have they records of each notice and certification received, and analysis of the waste to confirm compliance? 268.7(c), 265.73(b)(11)	—	—	<i>facility does inhouse treatment of 115 tons</i>
Surface impoundments:			
If wastes otherwise prohibited from land disposal are treated in surface impoundments, has the facility: 268.4(a)-			<i>*NO surface impoundments</i>
(1) Treated, not just stored, the wastes in the impoundment?	—	—	<i>N/A</i>
(2) Analyzed and removed all treatment residues (sludge and supernatant*) that do not meet the treatment standards annually?	—	—	
Not placed the residues in another impoundment for subsequent management?	—	—	
Specified the procedures and schedule for sampling, analysis, and removal of any residues in the waste analysis plan?	—	—	
(3) Certified that all impoundments used to treat restricted wastes meet the design requirements (265.221(a)), and the facility is in compliance with GW monitoring (265 Subpart F) requirements?	—	—	
Is evaporation not used as the principal means of treatment? 268.4(b)	—	—	

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* If the annual flow through the impoundments is greater than the combined volume of the impoundments, the supernatant is considered removed. 268.4(a)(2)

Land Disposal Restrictions - Continued
(Part 268)

Attachments:

RESTRICTED WASTES AND EFFECTIVE DATES:

Solvents and dioxins:

Effective Date:

Dioxin containing wastes F020-F023, F026-F028

11/8/88

F001-F005 solvent wastes generated solely by small quantity generators of between 100-1000 kg/mo., or in total concentrations of less than 1%

"

F001-5 solvent wastes generated from a response action or corrective action

"

F001-5 solvent waste residues described in 268.30(a)(1-3)

"

All other F001-F005 wastes

11/8/86

"California List" wastes:

Effective date:

Liquid H.W. having a pH \leq 2

7/8/87

Liquid H.W. or solid H.W. with free liquids concentrations \geq for following metals or elements and/or compounds:

"

Arsenic (as As) 500 mg/l

Mercury (as Hg) 20 mg/l

Cadmium (as Cd) 100 mg/l

Nickel (as Ni) 134 mg/l

Chromium (as Cr VI) 500 mg/l

Selenium (as Se) 100 mg/l

Lead (as Pb) 500 mg/l

Thallium (as Tl) 130 mg/l

Liquid H.W. containing polychlorinated biphenyls (PCBs) at concentrations \geq 50 ppm

"

Liquid H.W. that are primarily water and contain HOCs in total concentration \geq 1,000 mg/l and less than 10-000 mg/l HOCs

"

Contaminated soil or debris resulting from a response action or corrective action

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Liquid H.W. that is not primarily water and contains \geq 1,000 mg/l HOCs

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Non-liquid H.W. that contains \geq 1,000 mg/kg HOCs

"

All other "California List" wastes

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Land Disposal Restrictions - Continued
(Part 268)

F001-F005 spent solvents.
Treatment standards effective
11/8/86.

	Treatment Standard (mg/l)	
	Wastewaters	All Other Wastes*
Acetone	0.05	0.59
n-Butyl alcohol	5.00	5.00
Carbon disulfide	1.05	4.81
Carbon tetrachloride	0.05	0.96
Chlorobenzene	0.15	0.05
Cresols	2.82	0.75
Cresylic acid	2.82	0.75
Cyclohexanone	0.125	0.75
1,2-Dichlorobenzene	0.65	0.125
Ethyl acetate	0.05	0.75
Ethyl benzene	0.05	0.053
Ethyl ether	0.05	0.75
Isobutanol	5.00	5.00
Methanol	0.25	0.75
Methylene chloride	0.20	0.96
Methylene chloride from pharmaceutical industry	12.70	0.96
Methyl ethyl ketone	0.05	0.75
Methyl isobutyl ketone	0.05	0.33
Nitrobenzene	0.66	0.125
Pyridine	1.12	0.33
Tetrachloroethylene	0.079	0.05
Toluene	1.12	0.33
1,1,1-Trichloroethane	1.05	0.41
1,2,2-Trichloroethane	1.05	0.96
1,1,2-Trifluoroethane	1.05	0.96
Trichloroethylene	0.062	0.091
Trichlorofluoromethane	0.05	0.96
Xylene	0.05	0.15

* The treatment standards in this treatability group are based on incineration.

F020, F021, F022, F023, F026, F027 or F028 dioxin containing wastes.
These treatment standards become effective 11/8/88. Treatment Standard

HxCDD-All Hexachlorodibenzo-p-dioxins	< 1 ppb
HxCDF-All Hexachlorodibenzofurans	< 1 ppb
PeCDD-All Pentachlorodibenzo-p-dioxins	< 1 ppb
PeCDF-All Pentachlorodibenzofurans	< 1 ppb
TCDD-All Tetrachlorodibenzo-p-dioxins	< 1 ppb
TCDF-All Tetrachlorodibenzofurans	< 1 ppb
2,4,5-Trichlorophenol	< 0.05 ppm
2,4,6-Trichlorophenol	< 0.05 ppm
2,3,4,6-Tetrachlorophenol	< 0.10 ppm
Pentachlorophenol	< 0.01 ppm

Note: Where a single constituent is addressed under more than one rulemaking, the applicable treatment standard or prohibition level is that for the more specific waste stream.
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**Halogenated Organic Compounds
Regulated Under § 268.32**

In determining the concentration of HOCs in a hazardous waste for purposes of the § 268.32 land disposal prohibition, EPA has defined the HOCs that must be included in the calculation as any compounds having a carbon-halogen bond which are listed in this Appendix (see § 268.2). Appendix III to Part 268 consists of the following compounds:

Volatiles

Bromodichloromethane
Bromomethane
Carbon Tetrachloride
Chlorobenzene
2-Chloro-1,3-butadiene
Chlorodibromomethane
Chloroethane
2-Chloroethyl vinyl ether
Chloroform
Chloromethane
3-Chloropropene
1,2-Dibromo-3-chloropropane
1,2-Dibromomethane
Dibromomethane
Trans-1,4-Dichloro-2-butene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethylene
Trans-1,2-Dichloroethene
1,2-Dichloropropane
Trans-1,3-Dichloropropene
cis-1,3-Dichloropropene
Iodomethane
Methylene chloride
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Tribromomethane
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethene
Trichloromonofluoromethane
1,2,3-Trichloropropane
Vinyl chloride

Semivolatiles

Bis(2-chloroethoxy)ethane
Bis(2-chloroethyl)ether
Bis(2-chloroisopropyl) ether
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol
2-Chloronaphthalene
2-Chlorophenol
3-Chloropropionitrile
m-Dichlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Hexachloropropene
4,4'-Methylenebis(2-chloroaniline)
Pentachlorobenzene

Pentachloroethane
Pentachloronitrobenzene
Pentachlorophenol
Pronamide
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
1,2,4-Trichlorobenzene
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
Tris(2,3-dibromopropyl)phosphate

Organochlorine Pesticides

Aldrin
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC
Chlordane
DDD
DDE
DDT
Dieldrin
Endosulfan I
Endosulfan II
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide
Isodrin
Kepone
Methoxychlor
Toxaphene

Phenoxyacetic Acid Herbicides

2,4-Dichlorophenoxyacetic acid
Silvex
2,4,5-T

PCBs

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260
PCBs not otherwise specified

Dioxins and Furans

Hexachlorodibenzo-p-dioxins
Hexachlorodibenzofuran
Pentachlorodibenzo-p-dioxins
Pentachlorodibenzofuran
Tetrachlorodibenzo-p-dioxins
Tetrachlorodibenzofuran
2,3,7,8-Tetrachlorodibenzo-p-dioxin

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INSPECTOR LOML

110. U.S. EPA ID Number

Enter the U.S. EPA twelve-digit Identification Number of the designated facility identified in Item 10.

111. U.S. DOT Description

Enter the U.S. DOT Proper Shipping Name, Hazard Class, and ID Number (UN/NA) for each waste as identified in 49 CFR 171 through 177.

112. Containers (No. and Type)

Enter the number of containers for each waste and the appropriate abbreviation from Table I (below) for the type of container.

Receipt of Materials

Enter the name of the person accepting the waste on behalf of the first transporter. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Item 18. Transporter 2 Acknowledgement of Receipt of Materials

Enter, if applicable, the name of the person accepting the waste on behalf of the second transporter. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Generator — Enter waste category number. Select appropriate number from Table I. Review entire table before selecting a number. Do not fill in handling code(s).

J. Additional Descriptions For Materials Listed Above

Generator — Enter chemical composition for each waste category. List component corresponding to the waste category entered.

K. Handling Codes for Wastes Listed Above
Operator of TSD — Enter waste handling code(s). Select appropriate code(s) from Table IV.

Table III

725.	Liquids with mercury ≥ 20 Mg/L
726.	Liquids with nickel ≥ 134 Mg/L
727.	Liquids with selenium ≥ 100 Mg/L
728.	Liquids with tellurium ≥ 130 Mg/L
731.	Liquids with polychlorinated biphenyls ≥ 50 Mg/L

Table IV

181.	Other inorganic solid waste
211.	Organics
212.	Halogenated solvents (chloroform, methyl chloride, perchloroethylene, etc.)
213.	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
214.	Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)
221.	Unspecified solvent mixture
222.	Waste oil and mixed oil
223.	Oil/water separation sludge
231.	Unspecified oil-containing waste
232.	Pesticides and other waste associated with pesticide production
241.	Tank bottom waste
251.	Still bottoms with halogenated organics
261.	Other still bottom waste
271.	Polychlorinated biphenyls and material containing PCBs
272.	Organic monomer waste (includes unreacted resins)
281.	Polymeric resin waste
291.	Adhesives
311.	Latex waste
321.	Pharmaceutical waste
331.	Sewage sludge
332.	Biological waste other than sewage sludge
333.	Off-specification, aged, or surplus organics

Table IV

06	Surface Impoundment (D63)
07	Thermal Treatment (T03)
08	(Include Incineration)
09	Neutralization (T31)
09	Filtration (T47)

01	Recycle (R01)
02	Injection Well (D79)
03	Landfill (D80)
04	Land Application (D81)
05	Ocean Disposal (D82)

741.	Liquids with halogenated organic compounds ≥ 1000 Mg/L
751.	Solids or sludges with halogenated organic compounds ≥ 1000 Mg/Kg.
791.	Liquids with pH ≤ 2
801.	Waste potentially containing Dioxins

341.	Organic liquids (non-solvents) with halogens
342.	Organic liquids with metals (see 111.)
343.	Unspecified organic liquid mixture
351.	Organic solids with halogens
352.	Other organic solids

411.	Sludges
421.	Alum and gypsum sludge
431.	Lime sludge
441.	Phosphate sludge
451.	Sulfur sludge
461.	Degreasing sludge
471.	Paint sludge
481.	Paper sludge/pulp
491.	Tetraethyl lead sludge
491.	Unspecified sludge waste

511.	Miscellaneous
512.	Empty pesticide containers 30 gal. or more
513.	Other empty containers 30 gallons or more
521.	Empty containers less than 30 gallons
531.	Drilling Mud
541.	Chemical toilet waste
551.	Photochemical/photoprocessing waste
561.	Laboratory waste chemicals
571.	Detergent and soap
581.	Fly ash, bottom ash, and retort ash
591.	Gas scrubber waste
611.	Baghouse waste
612.	Contaminated soil
612.	Household wastes

10	Stabilization Pond (T76)
14	Transfer Station (H01)
15	Tank Treatment (T01)
16	Treatment Pond (T02)
99	Other (D99)